REMARKS

Claims 1-26 are pending and under consideration. Please amend claims 1, 2, 3, 10, 17 and 26. Please add new claim 27. Support for the amendments to the claims can be found throughout the specification as filed and, at least, at Paragraphs [0056]-[0058]; [0072]-[0076] and Fig. 7 of the Application as Originally Filed ("the '053 Application"). Applicants respectfully submit that no new matter is introduced with the amendments.

The Office Action states that claims 1-26 stand rejected. In view of the following remarks, Applicants respectfully requests reconsideration and withdrawal of the grounds of rejection.

I.   SUMMARY OF MAY 30, 2008 TELEPHONIC INTERVIEW WITH EXAMINER

Applicants thank the Examiner for his time and helpful comments the telephonic interview on May 30, 2008. As summarized in Applicants' Amendment and Response dated July 31, 2008, the pending Office Action and independent claims and U.S. Patent No. 6,215,789 issued to Keenan et al. were discussed during the interview. No agreements were reached.

II.   REJECTION OF CLAIMS 1-5, 8-9, 10-12 AND 15-16 UNDER 35 U.S.C. § 102 (B)

Claims 1-5, 8-9, 10-12 and 15-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,215,789 to Keenan et al. ("Keenan"). For a claim to be anticipated under 35 U.S.C. § 102(b), the reference must disclose each and every limitation in the claim. Applicants respectfully submit that Keenan fails to disclose each and every limitation in the claimed invention.

A.   <u>Keenan Should Not Have Been Cited Under 35 U.S.C. § 102(b)</u>

Applicants respectfully note that the Office Action states that "Keenan is silent on a synchronization tag identifying the common synchronization interval during which the plurality of subpackets were constructed; data identifying the number of subpackets contained within the data structure; and context data associated with each one of the plurality of subpackets, the

context data including a destination time slot identifier corresponding to the source time slot associated with the subpackets." See Page 10 of the Office Action dated September 16, 2008.

Applicants claimed invention recites a destination time slot identifier and a synchronization tag. Accordingly, Applicants respectfully submit that Keenan should not have been cited as a rejection under 35 U.S.C. § 102(b). However, in the interest of advancing prosecution, Applicants respectfully address the rejections below and respectfully request reconsideration and withdrawal of the rejections to the claims. Further, Applicants respectfully submit that for the reasons stated below, Keenan also should not have been cited as a rejection under 35 U.S.C. § 103.

B. Keenan Fails To Disclose, And Teaches Away From, A Subpacket Comprising Data Corresponding To A Destination Time Slot Identifier

Independent claims 1-3 and 10 recite, in part, a subpacket being associated with a first source time slot in the time-division multiplexing frame and comprising data corresponding to a first destination time slot identifier. Independent claims 1-3 and 10 also recite, in part, a second subpacket being associated with a second source time slot in the time-division multiplexing frame and comprising data corresponding to a second destination time slot identifier.

Keenan states that it is an object of the invention to provide a "fixed rate timing reference signal...for the recovery and synchronization of real-time data over a non-isochronous system." Col. 8, lines 36-40. Keenan discloses that "[a]nother feature of the present invention is the generation and transmission of Master Ethernet Packets at a constant ... rate with CBR channel data bits encapsulated at fixed locations within the packets." See Col. 18, lines 9-16; see also Col. 18, lines 20-25, lines 63-66; Col. 19, lines 19-22; Col. 22, lines 53-57; Col. 27, lines 15-18; Col. 29, lines 51-55; Col. 30, lines 1-8, lines 14-22. "This feature of the present invention provides a deterministic transmission scheme, which enables the receiver to synchronously extract the CBR channel data bits from the arriving packets." See Col. 18, lines 9-16. The spacing of the reserved blocks for CBR channel data is designed to accommodate the standard sampling rate used in digital telecommunications systems. See Col. 23, lines 26-28; see also Col. 24, lines 8-11; col. 26, lines 53-58. The CBR channel bits can be extracted from the known

fixed CBR channel locations within the Master Ethernet Packet payload and transferred to a TDM Flow Queue in a synchronous manner." See Col. 22, lines 58-64. Keenan states that "[t]he CBR channel requires no overhead octets because the receiver is capable of extracting the CBR channel data bits from the fixed locations within the Master Ethernet Packet." Col. 18, lines 37-39. Keenan states that encapsulating CBR channel data and user packet data into Master Ethernet Packets significantly reduces the number of overhead octets required compared to the packet fragmentation method. Col. 18, lines 35-37. Keenan also discloses that a MAC SA in the header of a Master Ethernet Packet is used to search a local address table to obtain the identifier for the reserved TDM Flow Queue. See Col. 14, lines 56-64.

Applicants respectfully submit that Keenan not only fails to disclose, but also teaches away from, a first subpacket and second subpacket that include data corresponding to a first and second destination time slot identifier, respectively. The Office Action cites "slot number of CBR slot 1" as corresponding to a destination time slot identifier. The "slot number" in Fig. 5, however, merely reflects that the CBR channel data bits encapsulated at fixed locations within the Master Ethernet Packet so that the receiver can extract the CBR data from the Master Ethernet Packets. The "slot number," however, is not data in a subpacket corresponding to a destination time slot identifier. In fact, Keenan instead teaches that a local address table is used to identify the reserved TDM Flow Queue. Keenan discloses that as CBR channel data bits are in fixed locations within the Master Ethernet Packets, the CBR channel requires no overhead octets and that the deterministic encapsulation of the CBR channel data bits significantly reduces the number of overhead octets required. Applicants respectfully submit that interpreting Keenan to include data in a subpacket corresponding to a destination time slot identifier would render Keenan inoperable for its primary purpose. Therefore, Applicants respectfully submit that the deterministic transmission scheme of Keenan teaches away from a subpacket that includes data corresponding to a destination time slot identifier.

C.   **Keenan Fails To Disclose, And Teaches Away From, Storing Subpackets In Buffers Based On Data Corresponding to Destination Time Slot Identifiers**

Independent claim 1 recites, in part, extracting the subpackets from the packet and storing the subpackets in a first buffer and a second buffer based on the data corresponding to the first destination time slot identifier and data corresponding to the second destination time slot identifier stored within the respective subpackets, the first buffer being associated with the first destination time slot and the second buffer being associated with the second destination time slot. Independent claims 2, 3 and 10 recite similar limitations.

Keenan discloses that a MAC SA in the header of a Master Ethernet Packet is used to search a local address table to obtain the identifier for the reserved TDM Flow Queue. See Col. 14, lines 56-64. Keenan states that "[t]he entry that is returned from the local address table search will contain the identifier for the reserved TDM Flow Queue." See Col. 14, lines 62-64. CBR channel data bits are encapsulated at fixed locations, at fixed rates, within the Master Ethernet packets. See Col. 18, lines 9-16; see also Col. 18, lines 20-25, lines 63-66; Col. 19, lines 19-22; Col. 22, lines 53-57; Col. 27, lines 15-18; Col. 29, lines 51-55; Col. 30, lines 1-8, lines 14-22. As noted above, the spacing of the reserved blocks for the CBR channel data is designed to accommodate the standard sampling rate used in digital telecommunications systems." See Col. 23, lines 26-28; see also Col. 24, lines 8-11; Col. 26, lines 53-58. The Ethernet SAR function extracts the CBR channel bits from the known fixed CBR channel locations within the Master Ethernet Packet payload and transfers them to a TDM Flow Queue in a synchronous manner. See Col. 22, lines 58-64. "The CBR channel bits carried in fixed locations within these Master Ethernet Packets also arrive at a fixed rate synchronized to the master clock oscillator in the CSM. These are features of the present invention." See Col. 29, lines 50-55. Keenan discloses that "[t]he CBR channel requires no overhead octets because the receiver is capable of extracting the CBR channel data bits from the fixed locations within the Master Ethernet Packet." Col. 18, lines 37-39.

As discussed above, Applicants respectfully submit that Keenan fails to disclose, teach or suggest data in the subpackets corresponding to a destination time slot identifier. Keenan's deterministic transmission scheme also teaches away from Applicant's claimed invention.

Keenan discloses using a local address table to identify the reserved TDM Flow Queue. CBR channel data bits in Keenan encapsulated at fixed locations within the Master Ethernet Packet act as "fixed rate timing reference signals" so that the receiver can extract the CBR channel data from the Master Ethernet Packet. In fact, Keenan explicitly discloses that the CBR channel requires no overhead octets. In contrast, Applicants claimed invention recites that the appropriate buffer and/or data stream for each subpacket is determined based on <u>data in the subpackets</u> corresponding to a destination time slot identifier. Furthermore, Applicants respectfully submit that Keenan should not be used in combination with another reference to remedy the deficiencies of Keenan as doing so would render Keenan inoperable for its primary purpose.

D.   Keenan Fails To Disclose, And Teaches Away From, Arranging Subpackets Within A Buffer Based on Data In A Packet Corresponding to a <u>Synchronization Tag</u>

Independent claim 1 recites, in part, a packet comprising data corresponding to a synchronization tag identifying the synchronization interval in which the first subpacket and the second subpacket were formatted. Independent claim 1 also recites, in part, the arrangement of subpackets within the first buffer and the second buffer being determined by data corresponding to a synchronization tag identifying the synchronization interval during which the subpacket was generated plus a known fixed delay offset. Independent claim 2 also recites similar limitations.

Keenan states that it is an object of the invention to provide a "fixed rate timing reference signal...for the recovery and synchronization of real-time data over a non-isochronous system." Col. 8, lines 36-40. CBR channel data bits in Keenan are encapsulated at fixed locations within the packets. See Col. 18, lines 9-16; see also Col. 18, lines 20-25, lines 63-66; Col. 19, lines 19-22; Col. 22, lines 53-57; Col. 27, lines 15-18; Col. 29, lines 51-55; Col. 30, lines 1-8, lines 14-22. Keenan states that "[t]his feature of the present invention provides a deterministic transmission scheme, which enables the receiver to synchronously extract the CBR channel data bits from the arriving packets." See Col. 18, lines 9-16. Keenan also discloses that "the timing for the TDM Highway and the transmission of the Master Ethernet Packets from the UTE Adapter have been derived from the system Master Clock. Therefore, the frame rate of the TDM Highway and the

CBR channel arrival rate from the UTE Adapter are synchronized." See Col. 28, lines 48-53; see also Col. 27, lines 39-45. Keenan further discloses that "[t]he CBR channel bits carried in fixed locations within these Master Ethernet Packets also arrive at a fixed rate synchronized to the master clock oscillator in the CSM. These are features of the present invention." See Col. 29, lines 50-55.

The Office Action cites "slot number of CBR slot in FIG. 5" as corresponding to a synchronization tag identifying the synchronization interval in which the first subpacket and the second subpacket were formatted. Applicants respectfully note that the Office Action refers to "slot number" of CBR slot in FIG. 5 for both the destination time slot identifier and also the synchronization tag. Applicants respectfully submit that, as an initial matter, the destination time slot identifier of the Applicants' claimed invention is a different element than the synchronization tag.

As noted above, the "slot number" in Fig. 5 merely reflects the CBR channel data bits encapsulated at fixed locations, at fixed rates, within the Master Ethernet Packet that act as "fixed rate timing signals." Applicants respectfully submit that the "slot number" is not data corresponding to a synchronization tag. Instead, the CBR channel data bits of Keenan are encapsulated at fixed locations so that the receiver can extract the CBR data from the Master Ethernet Packets. Keenan discloses that the frame rate and the arrival rate of the Master Ethernet Packets carrying the CBR channel data bits are synchronized to a Master Clock. In contrast, Applicants' claimed invention uses data in a packet corresponding to a synchronization tag to determine the arrangement of subpackets within a buffer. Applicants respectfully submit that Keenan's deterministic transmission scheme and synchronized arrival of Master Ethernet Packets teaches away from a packet that includes data corresponding to a synchronization tag to determine the arrangement of the subpackets within the buffer. Furthermore, Applicants respectfully submit that Keenan should not be used in combination with another reference to remedy the deficiencies of Keenan, as doing so would render Keenan inoperable for its primary purpose.

Claims 4-5, 8-9, 11-12 and 15-16 depend, directly or indirectly, from independent claims 3 and 10. For at least the reasons stated above, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 4-5, 8-9, 11-12 and 15-16.

III. REJECTION OF CLAIMS 17-19 UNDER 35 U.S.C. § 102(e)

Claims 17-19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,466,572 to Ethridge ("Ethridge"). For a claim to be anticipated under 35 U.S.C. § 102(e), the reference must disclose each and every limitation in the claim. Applicants respectfully submit that Ethridge fails to disclose each and every limitation in the claimed invention.

A. Ethridge Fails To Disclose, Teach or Suggest, Synchronous Time Slot Switching Of Synchronous Data In A Time-Division Multiplexing Frame Across The Asynchronous Packet Switch

Independent claim 17 recites, in part, synchronous time slot switching of synchronous data in a time-division multiplexing frame across the asynchronous packet switch.

Ethridge discloses that optical network unit 56 includes optical and electrical circuits to convert PCM voice data originating as analog signals from the telephone sets 18, and digital packet data from the computers 10 into corresponding optical signals, and vice versa. See Col. 11, lines 65-67; Col. 12, lines 1-3. Ethridge discloses that optical channel shelf 54 separates PCM voice signals from computer data packets. See Col. 12, lines 49-55. PCM data is coupled on to PCM channel equipment or other PCM equipment adapted for transmitting such type of data. See Col. 13, lines 17-32. Data packets are placed on a high speed bus 60 and checked for collision avoidance by the optical maintenance unit 62 with 10-Base-T bus 64 connected to Fast Ethernet Switch 66. See Col. 12, lines 24-50. Ethridge discloses that optical channel shelf 54 is provided with clock signals from the common equipment shelf, or other circuits of the digital terminal that includes common digital carrier equipment for transmitting and receiving digitized voice signals according to conventional telecommunications protocols, such as the T1 carrier format. See Col. 17, lines 9-19.

PCM voice signals in Ethridge are not switched across Ethernet Switch 66. Instead, Ethridge teaches that PCM voice signals from optical network unit 56 are separated by the

optical channel shelf and coupled on to PCM equipment. Ethridge discloses clock signals for digitized voice signals, however, Ethridge teaches that the PCM voice signals are coupled on to PCM equipment and not on to Ethernet Switch 66. Ethridge merely discloses that the user data packets are switched across Ethernet Switch 66. Applicants respectfully submit that the user data packets in Ethridge are not synchronous data. Therefore, Applicants respectfully submit that Ethridge fails to disclose, teach or suggest, synchronous time slot switching of synchronous data in a time-division multiplexing frame across an asynchronous packet switch.

B.   Ethridge Fails To Disclose, Teach or Suggest, Subpackets Comprising Data Corresponding to A Destination Time Slot Identifier

Independent claim 17 also recites, in part, packets of the synchronous data across the asynchronous packet switch, the packets comprising at least a first subpacket being associated with a first source time slot in a time-division multiplexing frame and comprising data corresponding to a first destination time slot identifier.

Ethridge discloses PC data packets and computer data packets. See Col. 12, lines 30 and 51. Ethridge states that "[i]t is important to note that in accordance with an important feature of the invention, the optical network units 70 and the optical channel units 54 only transport the transmit/receive data packets, but do not decode the various fields and carry out processing thereof, as do conventional Ethernet bridges." See Col. 12, lines 63-37.

At best, Ethridge discloses PC data packets or computer data packets that can be converted into optical signals. However, Applicants can find no mention that the packets include subpackets. Furthermore, Applicants can also find no mention in Ethridge of a first destination time slot identifier. Therefore, Applicants respectfully submit that Ethridge fails to disclose, teach or suggest Applicants' claimed invention.

Claims 18-19 depend, directly or indirectly, from independent claim 17. For at least the reasons stated above, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 18-19.

IV. REJECTION OF CLAIMS 6-7, 13-14 AND 26 UNDER 35 U.S.C. § 103(a)

Claims 6-7, 13-14 and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Keenan in view of Luby et al., "Reliable Multicast Transport Building Block: Multirate Congestion Control", July 2000 ("Luby"). For the rejection under 35 U.S.C. § 103(a) to be proper, the references, alone or in combination, must teach or suggest all of the claim limitations. Applicants respectfully submit that neither Keenan nor Luby, either alone or in combination, disclose, teach or suggest every element of the claimed invention.

A. Neither Keenan Nor Luby, Either Alone Or In Combination, Disclose, Teach Or Suggest, A Subpacket Comprising Data Corresponding To A Destination Time Slot Identifier

Independent claim 26 recites, in part, a first subpacket associated with a first source time slot in a time-division multiplexing frame and comprising data corresponding to a first destination time slot identifier associated with a first buffer.

The Office Action states that "Keenan is silent on . . . context data associated with each one of the plurality of subpackets, the context data including a destination time slot identifier corresponding to the source time slot associated with the subpackets." See Page 10 of the Office Action dated September 16, 2008. The Office Action also states that "Luby does not explicitly specify the other information comprising...context data, but he suggests implicitly that the packet may contain any data needed." See id. Therefore, the Office Action acknowledges that neither Keenan nor Luby disclose, either alone or in combination, a subpacket comprising data corresponding to a first destination time slot identifier.

Furthermore, as discussed above, Applicants respectfully submit that Keenan not only fails to disclose, but teaches away from, a subpacket comprising data corresponding to a destination time slot identifier. Applicants respectfully submit that Luby fails to remedy the deficiencies of Keenan. Briefly, Luby discloses a multicast approach that allows multiple receivers to concurrently receive packets from a single sender at varying rates depending on individual bandwidth connections and network conditions. See Luby at Abstract. "MRCC [multirate congestion control] performs congestion control by dedicating multiple MRCC groups

to a session. Receivers joined to the session are subject to heterogeneous reception rates...."
See Page 6. Luby discloses that "[t]he sender places into each packet the MRCC group number
of the packet." See Page 8.

Luby, therefore, merely discloses that an MRCC group number can be placed in a packet
and that multiple MRCC groups can be dedicated to a session that the receivers can join.
Applicants, however, can find no mention or suggestion in Luby of a subpacket comprising data
corresponding to a destination time slot identifier. Applicants respectfully submit that to
interpret Keenan or Luby to read upon Applicants' claimed invention would require
impermissible hindsight. Inserting data into a packet and/or a header is known in the art.
However, neither Keenan nor Luby teach or suggest the specific data used for the specific
purpose as claimed by the Applicants. Applicants respectfully submit that one skilled in the art,
aside from Applicants' claimed invention, would find no reason from the teachings of Keenan or
Luby to include data in a subpacket corresponding to a destination time slot identifier.

B. Neither Keenan Nor Luby, Either Alone Or In Combination, Disclose, Teach Or Suggest, A Synchronization Tag As Claimed By Applicants

Independent claim 26 also recites, in part, data corresponding to a synchronization tag in
the packet determining the arrangement of the plurality of subpackets within the first buffer and
the second buffer.

As discussed above, Applicants respectfully submit that Keenan not only fails to disclose,
but teaches away from, a synchronization tag in the packet determining the arrangement of the
plurality of subpackets within the first buffer and the second buffer. Applicants respectfully
submit that Luby fails to remedy the deficiencies of Keenan. Briefly, Luby discloses that "[t]he
sender partitions time into equal duration intervals called time slots. The time slot duration TSD
determines the reaction time of receivers to changing network congestion conditions . . . .
Associated with each time slot is the time slot index." See Page 7. Luby states that "the sender
places into each packet the time slot index...." See Page 8.

Luby merely discloses placing into each packet a time slot index that is related to the
reaction time of receivers to changing network congestion conditions. In contrast, Applicants'

claimed invention recites a synchronization tag that determines the arrangement of subpackets within a specific buffer. Therefore, Applicants respectfully submit that Luby fails to disclose, teach, or suggest a synchronization tag that determines the arrangement of the plurality of subpackets within a buffer.

C. Combining Luby with Keenan Would Render Keenan Inoperable For Its Primary Purpose

As noted above, Applicants respectfully submit that Keenan's deterministic transmission scheme and synchronized arrival of the Master Ethernet Packets teaches away from a subpacket that includes data corresponding to a destination time slot identifier and a packet that includes data corresponding to a synchronization tag. Specifically, Keenan states that encapsulating CBR channel Data Bits at fixed locations in a Master Ethernet Packet is a "feature of the present invention [that] provides a deterministic transmission scheme, which enables the receiver to synchronously extract the CBR channel data bits from the arriving packets." See Col. 18, lines 9-16. Keenan discloses that "[t]he CBR channel requires no overhead octets because the receiver is capable of extracting the CBR channel data bits from the fixed locations within the Master Ethernet Packet." Col. 18, lines 37-39. Without conceding to the arguments in the Office Action, and to the extent that Luby could be interpreted to "suggest implicitly that the packet may contain any data needed," Applicants' respectfully submit that modifying Keenan to include data in a subpacket corresponding to a destination time slot identifier and data in the packet corresponding to a synchronization tag would render the deterministic transmission scheme of Keenan inoperable for its primary purpose.

Claims 6-7 and 13-14 depend, directly or indirectly, from independent claims 3 and 10. For at least the reasons stated above, Applicants respectfully request reconsideration and withdrawal of the rejections to claims 6-7 and 13-14.

V. REJECTION OF CLAIMS 20-23 UNDER 35 U.S.C. § 103(a)

Claims 20-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ethridge further in view of Keenan and Luby. For the rejection under 35 U.S.C. § 103(a) to be proper, the references, alone or in combination, must teach or suggest all of the claim limitations.

Applicants respectfully submit that Ethridge, Keenan nor Luby, either alone or in combination, disclose, teach or suggest every element of the claimed invention.

Claims 20-23 depend, directly or indirectly, from independent claims 17. For at least the reasons stated above, Applicants respectfully request reconsideration and withdrawal of the rejections to claims 20-23.

VI.   REJECTION OF CLAIMS 24-25 UNDER 35 U.S.C. § 103(a)

Claims 24-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ethridge in view of Keenan. For the rejection under 35 U.S.C. § 103(a) to be proper, the references, alone or in combination, must teach or suggest all of the claim limitations. Applicants respectfully submit that neither Keenan nor Ethridge, either alone or in combination, disclose, teach or suggest every element of the claimed invention.

Claims 24-25 depend, directly or indirectly, from independent claims 17. For at least the reasons stated above, Applicants respectfully request reconsideration and withdrawal of the rejections to claims 24-25.

CONCLUSION

Applicants' discussion of particular positions of the Examiner does not constitute a concession with respect to any positions that are not expressly contested by the Applicants. Applicants' emphasis of particular reasons why the claims are patentable does not imply that there are not other sufficient reasons why the claims are patentable nor does it imply the claims were not allowable in their unamended form.

In view of the foregoing remarks and the inability of the prior art, alone or in combination to anticipate, suggest, or make obvious the subject matter as a whole of the invention disclosed and claimed in this application, all claims are submitted to be in a condition for allowance, and notice thereof is respectfully requested. If the Examiner feels that a telephone conference would expedite the prosecution of this case, the Examiner is invited to call the undersigned.

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